

USSR

RUSHCHINSKIY, V. M., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 21, Aug 71, Author's Certificate No 309362, Division G, filed 24 Feb 69, published 9 Jul 71, p 188

which the difference between the computed and measured values is greater than a preassigned limit. Before the data channel is restored to working order, the appropriate calculated input signal of the model is substituted for the pickup signal for the given parameter. 2. A modification of this method is distinguished by the fact that when the discrepancy between the measured and calculated values of one of the output parameters of the operation goes beyond the permissible amount, the defect of the measurement channel for the given output parameter is determined, and the appropriate signal of the model is substituted for the signal from the pickup.

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USSR

UDC 512.7

FRIDMAN M. A.

" $T^{(n)}$ -Multiplications of Groups"

V sb. Mat. i nekot. yeye prilozh. v teor. i prikl. yestestvozn. (Mathematics and Some of Its Applications in Theoretical and Applied Natural Science -- Collection of Works), Vyp. 4, Rostov on Don, 1970, pp 3-19 (from RZh-Matematika, No 2, Feb 72, Abstract No 2A285 by O. GOLOVIN)

Translation: Generalizing earlier works by the author (RZh-Matematika, 1959, Abstracts Nos 2372-2376) which concern a theory of so-called semicommutative operations (on a certain class of groups) defined by specific binary laws, the present article introduces and studies operations which are based on one or another  $n$ -ary law  $T^{(n)}$ , which segregates in any group  $G$  (or, possibly, only in groups from some abstract class  $\mathcal{L}$ )  $n$  of its normal divisors  $T_i(G)$ ,  $i = 1, 2, \dots, n$ . The group  $G$  is said to be the  $T^{(n)}$ -product of its subgroups  $A$  and  $B$  ( $G = AT^{(n)}B$ ) if  $G = \{A, B\}$ ,  $A \in \mathcal{L}$ ,  $B \in \mathcal{L}$ , and all relations binding in  $G$  the elements  $a \in A$ , and  $b \in B$ , are corollaries of every possible relation of the form  $a^{-1}b^{-1}ab = 1$  for  $a \in T_i(A)$ ,  $b \in \prod_{j \neq i} T_j(B)$  ( $i = 1, 2, \dots, n$ ).

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FRIDMAN, M. A., Mat. i nekot. yeye prilozh. v. teor. i prikl. yestestvozn.,  
Vyp. 4, Rostov on Don, 1970, pp 3-19

Among the established properties of  $T^{(n)}$ -multiplications let us note their correctness (RZh-Matematika, 1959, Abstract No 2368); necessary and sufficient conditions are given for the associativity of these operations. All constructions are naturally extrapolated from the binary case to the general case of any set of factors.

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AA0044813

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

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243885 EMISSION SPECTRAL ANALYSIS STAND comprises housing 1 inside of which are arranged support 2 with block 3 for fixing of the electrode 4, calibrated template 5, spring activated holder 6 with electrode 6 and opposite electrode 7 and holder mechanism. This ensures adjustment of the gap between the electrodes to suit the spectral analysis conditions.

15.5.67 as 1159285/26-25 M.G. FRIDMAN. LENINGRAD  
OPTICO-TECHNICAL WORKS. (29.9.69) Bul 17/14.5.69.  
Class 42h, 421. Int.Cl.G 01n.

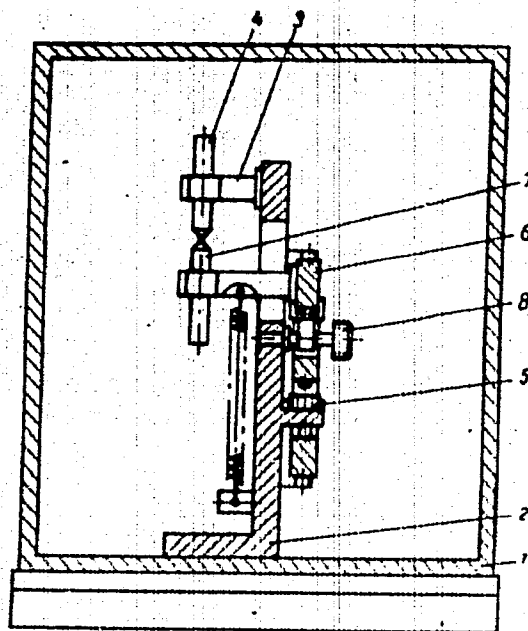
Leningradskoye Optiko-Mekhanicheskoye Ob"edineniye

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19771662

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Δδ

19771663

USSR

UDC 621.792.6:678.7

KOGAN, E. A., LOSEV, B. I., BALALAYEV, E. G., and FRIDMAN, M. L.;  
All-Union Scientific Research and Design Institute Teploproyekt,  
Moscow; Institute of Mineral Fuels, Moscow, Academy of Sciences  
USSR; Moscow Petroleum Conversion Plant

"Adhesion of Thermoplasts to Elastomers"

Moscow, Kolloidnyy Zhurnal, Vol 32, No 3, May-Jun 70, pp 373-376

Abstract: Elastomer-thermoplast sheets of the type used as coatings protecting against corrosion were prepared from butyl rubber, butadiene-styrene rubber (SKS-30), and butadiene-acrylonitrile rubber (SKN-40) that contained S and molten polypropylene joined to them under pressure. The two-layer sheets were subjected to vulcanization at 143° under pressure. The adhesion between the elastomer and polypropylene decreased in the order butyl rubber > SKS-30 > SKN-40. It was highest for butyl rubber because of the mutual compatibility of the two polymers, lower for SKS-30 because the rigid styrene groups interfered with mutual penetration, and lowest for SKN-40 because the cumbersome nitriloacrylic groups reduced interpenetration by diffusion. The adhesion was at a maximum after a 1/2

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KOGAN, E. A., et al, Kolloidnyy Zhurnal, Vol 32, No 3, May-Jun 70, pp 373-376

definite length of the time of vulcanization (15-18 min); if vulcanization was continued for a time greater than the optimal, adhesion decreased because of shrinkage of the elastomer due to structurization. Use of polypropylene of different grades showed that adhesion increased with an increasing degree of atactic structure in the polypropylene, which was associated with a decrease in density. Addition to the polypropylene of carbon black in amounts  $\leq 5\%$  increased adhesion, while amounts of carbon black  $> 5\%$  reduced it. In the vulcanization pressure range of 1-7 kg/cm<sup>2</sup>, the maximum adhesion was obtained at a pressure of 5 kg/cm<sup>2</sup>. The authors thank S. S. VOYUTSKIY for his interest in the results of the work.

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1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ADHESION OF THERMOPLASTS TO ELASTOMERS -U-  
AUTHOR--(04)--KOGAN, E.A., LOSEV, B.I., BALALAYEV, E.G., FRIDMAN, M.L.  
COUNTRY OF INFO--USSR  
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 373-376  
DATE PUBLISHED--70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--ADHESION, POLYPROPYLENE, THERMOPLASTIC MATERIAL, ELASTOMER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1602 STEP NO--UR/0069/70/032/003/0373/0376  
CIRC ACCESSION NO--AP0125224  
UNCLASSIFIED



2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125224

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF VARIOUS FACTORS ON THE STRENGTH OF THE ADHESION BOND BETWEEN POLYPROPYLENE AND RUBBERS HAS BEEN STUDIED. FOR ALL RUBBERS EXAMINED THE MAXIMUM ADHESION STRENGTH IS ATTAINED WITH THE CURING TIME APPROXIMATELY TWICE AS SMALL AS THAT REQUIRED FOR OPTIMUM PHYSICAL AND MECHANICAL PROPERTIES. INCREASE OF THE LAYER THICKNESS, POLARITY AND MOLECULAR WEIGHT OF RUBBERS DIMINISHES THEIR ADHESION TO NONPOLAR THERMOPLASTS. FACILITY: VNI I  
PROYEKTNYY INSTITUT TEPLOPROYEKT, MOSCOW. FACILITY: INSTITUT  
GORYUCHIKH ISKOPAYEMYKH AN SSSR, MOSCOW MOSKOVSKIY  
NEFTEPRERATYVAYUSHCHIY ZAVOD.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--23JUL70  
TITLE--EFFECT OF CURING CONDITIONS ON THE MODULUS OF ELASTICITY OF FA  
RESIN -U-  
AUTHOR-(02)-FRIDMAN, O.A., KAMENSKIY, I.V.  
COUNTRY OF INFO--USSR  
SOURCE--PLAST. MASSY 1970, (3), 30-2  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS  
  
TOPIC TAGS--ELASTIC MODULUS, SHEAR MODULUS, PRESSURE EFFECT, THERMAL  
EFFECT, FURFURAL, ACETONE, PLASTIC FABRICATION/(U)FA FURFURAL ACETONE  
RESIN  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/0659 STEP NO--UR/0191/70/000/003/0030/0032  
  
CIRC ACCESSION NO--AP0119567  
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119567

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF MOLDING CONDITIONS (PRESSURE LARGER THAN OR EQUAL TO 24,000 KG-CM PRIME2 AND TEMP. OF 120-200DEGREES), ON THE MODULUS OF ELASTICITY (E SUBT) AND SHEAR MODULUS (G) OF CURED FA RESIN WERE STUDIED. INCREASED MOLDING TEMP. GAVE HIGHER CUKE NO. AND LOWER EXTRACTANT CONTENT. AT LOW PRESSURES (250 KG-CM) G AND E SUBT WERE INVERSELY PROPORTIONAL TO TEMP.; CONVERSELY, AT HIGH PRESSURE (1600 KG-CM PRIME2), E SUBT AND G WERE PROPORTIONAL TO TEMP.

UNCLASSIFIED

USSR

UDC: 621.396.67:624.97(088.8)

KERPELEV, S. M., VAVILOVA, V. K., FRIDMAN, P. M.

"An Antenna Tower"

USSR Author's Certificate No 273304, filed 3 Mar 69, published 14 Sep 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B115 p)

Translation: The proposed antenna tower contains a mast made in the form of a tubular frame, a base, and a hoisting mechanism equipped with a speed reducer. To simplify the design of the hoisting mechanism and improve its operational reliability, the housing of the speed reducer is fastened by means of a bearing to a lug on the base. The housing is rigidly connected to the output shaft of the speed reducer and is equipped with a flange to which the end face of the tower mast is fastened.

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USSR

UDC: 621.396.67:624.97(088.8)

KERPELEV, S. M., MIROVA, T. D., FRIDMAN, P. M., ZINOV'YEVA, N. A.

"An Antenna Support"

USSR Author's Certificate No 272396, filed 27 Sep 68, published 22 Sep 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B113 P)

Translation: The proposed antenna support contains a bar for fastening the antenna, a cable drum, and an instrument cabinet. To improve convenience in the use of the support, it contains an operator's chair formed by the interconnected tubes which make up the stand of the support and the top of the instrument cabinet. The cabinet top is accommodated in the longitudinal slots of two tubes which fit into the fastening brackets of the cable drum. The drum has rims with tires and racks for holding the antenna in the collapsed position.

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USSR

UDC 621.3.032.35

KUTUKOV, L. V., MITROFANOVA, N. V., TIMOFEYEV, Yu. P., FRIDMAN, S. A., and SHCHAYENKO, V. V.

"Using Luminophores to Investigate the Heat in Electronic Circuits"

Moscow, Pribery i Tekhnika Eksperimenta, No. 3, 1971, pp 147-149

Abstract: Although infrared radiometry has been used for investigating thermal situations in electronic circuits, its results are not reliable. The purpose of this paper is to research further the recently applied luminophores for investigating temperature fields in electronic circuitry in printed circuit and integrated circuit form, a method free from many of the deficiencies involved in the use of infrared observations. The experiments described in this paper used as luminophores 5 $\mu$ -thick coatings of ZnS, CdS + Ag, and Ni crystal phosphors, which emit visible radiation when excited by ultraviolet light. The intensity of this visible radiation drops sharply with small increases in temperature. Also used were nichrome resistance films covered with a protective layer of SiO<sub>2</sub>. Among other results they obtained, the authors find that this method is convenient for direct visual tests and checks of operating integrated circuits. Curves of the ZnS, CdS + Ag, Ni luminophore sensitivity as a function of the temperature are given. The authors are in the Moscow Physical Institute, Academy of Sciences, USSR.

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1/2 014 UNCLASSIFIED  
TITLE—VAPOR PRESSURE OVER AQUEOUS SOLUTIONS OF NITROAMPHOS —U—  
AUTHOR—(02)—SKUM, L.S., FRIDMAN, S.D.  
COUNTRY OF INFO—USSR  
SOURCE—KHIM. PROM. (MOSCOW) 1970, 46(3), 191-3  
DATE PUBLISHED—70  
SUBJECT AREAS—CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS—VAPOR PRESSURE, AMMONIUM NITRATE, PHOSPHORUS OXIDE, AMMONIA  
CONTROL MARKING—NO RESTRICTIONS  
DOCUMENT CLASS—UNCLASSIFIED  
PROXY REEL/FRAE—2000/0960  
CIRC ACCESSION NO—AP0124620  
STEP NO—UR/0064/70/046/003/0191/0193  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE—30OCT70

CIRC ACCESSION NO—AP0124620

ABSTRACT/EXTRACT—(U) GP-0— ABSTRACT. THE PARTIAL VAPOR PRESSURES OF NH SUB4 NO SUB3 AND P SUB2 O SUB5 OVER NH SUB4 NO SUB3: NH SUB4 H SUB2 PO SUB4 MIXTS. (AT A WT. RATIO OF 58:42) CONTG. 3-35PERCENT H SUB2 O, AT 75-170DEGREES AND 200-760 TORR ARE NEGLIGIBLE AND THE TOTAL VAPOR PRESSURE P OVER THE SOLN. IS EQUAL TO THE PARTIAL PRESSURES OF NH SUB3 (WHICH HAS A MAX. OF 6 TORR AT 170DEGREES AND AN H SUB2 O CONCN. OF 3PERCENT) AND H SUB2 O; THE VALUE OF P AS A FUNCTION OF THE TEMP. T MAY BE CALCD. FROM THE EQUATION  $\log P = A - \frac{B}{T}$ , WHERE THE VALUE OF A INCREASES FROM 7.1 TO 8.05 WHEN THE H SUB2 O CONCN. IS INCREASED FROM 3 TO 35PERCENT AND B IS EQUAL TO 20000. THE B.P. OF THE MIXTS. AT 760 TORR INCREASES FROM 115.2 TO 195.9DEGREES (WHILE UNDER 200 TORR IT INCREASES FROM 75.9 TO 136.5DEGREES) WHEN THE H SUB2 O CONCN. IS REDUCED FROM 35 TO 2PERCENT.

UNCLASSIFIED



Acc. Nr: **AP0043755** **FRIDMAN** **Sh. D.** Ref. Code: UR 0050

PRIMARY SOURCE: Meteorologiya i Gidrologiya, 1970, Nr 3,  
pp 83-94

GAMMA-RAYS SURVEY OF SNOW COVER FROM AIRCRAFT  
Dmitriyev, A. V.; Kogan, R. M.; Nikiforov, M. V.;  
Fridman, Sh. D.

Physical prerequisites and methods of measuring the snow cover by means of gamma-rays survey from aircraft are stated; problems of mapping the snow resources over large territories are being considered.

REEL/FRA  
19770161

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USSR

UDC: 539.4.015

AZAREVICH, G. M., BERNSHTEYN, M. L., FRIDMAN, V. B., and SHUL'GIN, V. V.

"Thermomechanical Hardening of 4Kh10S2M Steel"

Moscow, Fizika i Khimiya Obrabotki Materialov, no. 6, Nov-Dec 70,  
pp 133-136

Abstract: A study has been made of the effect of various systems and parameters of thermomechanical treatment on the hardening of 4Kh10S2M steel designed for valves of tractor engines. It was found that upon high-temperature thermomechanical surface treatment (HTTST) of the working bevel of the valve, its hardness in the high-tempered state increases as compared to ordinary quenching and the same tempering. The obtained results make it possible to uniquely select optimum specifications for HTTST, including surface rolling using rolls 15 mm in diameter with a force of 250 - 400 kg per roll for 10-15 seconds, the degree of strain being about 40%. The recommended degree of strain with HTTST is consistent with the data in the literature. The suggested specifications insure maximum preservation of the hardness of 4Kh10S2M steel on tempering and high hardness immediately after treatment.

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USSR

UDC 539.4.43

LOSHAK, M. G., ~~FRIDMAN, V. M.~~, Institute of Ultrahard Materials, Kiev

"Effect of Size in Powder-Metallurgy Hard Alloys of the Tungsten Group"

Kiev, Problemy prochnosti, No. 8, Aug 71, pp 43-47

Abstract: The effect of the dimensions of hard-alloy samples and the technique of fabricating them on the static and dynamic strength characteristics of alloys with varying contents of cobalt and different elastic-plastic properties is studied. Medium-grain alloys with a Co content of 6, 15 and 25 wt. % were studied. This choice was due to the wide use of VK6, VK15 and VK25 alloys and the possibility of studying alloys with different elastic-plastic properties in order to obtain data characterizing the role of the scale effect for all alloys of the tungsten group. The characteristics of the cyclic strength under shock and harmonic loading were also studied in addition to determining the static strength and strength under a single shock because of the known great sensitivity of the fatigue tests to the scale effect. The smaller samples had dimensions of  $3.75 \times 3.75 \times 25$  mm, which are close to the dimensions of a

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• LOSHAK, M. G., FRIDMAN, V. M., Problemy prochnosti, No. 8, Aug 71, pp 43-47

standard sample and the largest had dimensions of  $15.00 \times 15.00 \times 100$ . It was found that a scale effect appears in hard alloys under static and single shock loading and under cyclic shock and harmonic loading. The drop in the strength limit under bending with an increase in the volume of the sample from 300 to 20,000 mm<sup>3</sup> is 40%. The strength of solid parts under static and dynamic loads were measured taking into account the effect of scale on the geometrically similar and structurally identical control samples. An additional change in the strength characteristics is associated with fabrication technology, said to be possible for very large parts of hard alloys.

1/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--FLOPPING OF MAGNETIC SUBLATTICES OF UNIAXIALLY COMPRESSED MANGANESE  
FLUORIDE -U-  
AUTHOR--(03)-DUDKO, K.L., YEREMENKO, V.V., FRIDMAN, V.M.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TVERD. TELA 1970, 12(1), 83-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, PHYSICS  
TOPIC TAGS--ANTIFERROMAGNETIC MATERIAL, FLUORIDE, MANGANESE COMPOUND,  
CRYSTAL LATTICE STRUCTURE, MAGNETOSTRICTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAHE--1980/0232 STEP NO--UR/0131/70/012/001/0033/0036  
CIRC ACCESSION NO--AP0048511  
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0048511

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS STUDIED OF UNIAXIAL COMPRESSION ON THE CRIT. FIELD OF FLOPPING OF MAGNETIC SUBLATTICES OF ANTIFERROMAGNETIC MNF SUB2 AT 4.2DEGREESK. THE METHOD USED MAKES IT POSSIBLE TO ESTABLISH AN EXTERNAL PULSED MAGNETIC FIELD ALONG THE AXIS OF SYMMETRY OF THE CRYSTAL WITH AN ACCURACY OF ANGLE LESS THAN OR EQUAL TO 5 PRIME OF ARC AND TO CARRY OUT A COMPARATIVE INVESTIGATION OF H SUBC ON COMPRESSED AND FREE SPECIMENS. THE MIN. WIDTH OF THE REGION OF TRANSITION CLOSE TO H SUBC EQUALS 91.7 KOE IS SIMILAR TO 300 OE AND IS DOUBLED AT ANGLE IS CONGRUENT TO 20 PRIME. IN UNIAXIAL COMPRESSION ALONG THE 4 FOLD AXIS, THE REGION OF THE TRANSITION IS BROADENED AND H SUBC INCREASES ALMOST LINEARLY WITH PRESSURE. THE MAGNITUDE OF THE EFFECT AGREES WITH THE PREVIOUSLY MEASURED JUMP OF MAGNETOSTRICTION IN THE CRIT. FIELD. EVALUATIONS OF THE CONTRIBUTIONS OF MAGNETODIPOLE INTERACTION AND CLASSICAL MAGNETOSTRICTION SHOW THAT THE EFFECT IS PARTIALLY DUE TO THE DEPENDENCE OF THE EXCHANGE INTEGRALS BETWEEN IONS OF OPPOSITE SUBLATTICES ON INTERAT. DISTANCES.

USSR

UDC 620.194

SHUSTOVA, Z. F., KUZNETSOV, G. G., ROZENFEL'D, I. L., and FRIDMAN, V. S., Academy of Sciences USSR, Institute of Physical Chemistry

"The Tendency of Type EP-65 Steel to Corrosion Cracking"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr, 1971, pp 183-187.

Abstract: The authors studied the tendency of specimens of EP-65 steel and welded joints of the steel to corrosion cracking, as well as methods of corrosion protection of this metal. EP-65 steel is a Martensitic steel based on 12% chromium with Ni, N, Mo and V. The tests were performed by periodic submersion in sea water, exposure to an atmospheric salt fog and exposure to a moist atmosphere without salt. The welded joints were found to be more inclined to corrosion cracking than the base metal. The main factor influencing the corrosion cracking of welded joints is the heat treatment used after welding, not the method of welding. Welded joints hardened in air from 1050° then tempered at 300° show corrosion cracking resistance almost as good as the base metal. The best protection for the metals and welded joints consists of a narrow strip of zinc coating on the welded joint, plus one base coat and three coats of enamel over the entire surface of the object.

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USSR

UDC 669.14.018.298,620.172

KACAN, YE. S., SMIRNOV, B. S., and FRIDMAN, V. S.

"Ductility and Plasticity Increase of OOOKh11N10M2T Steel in Large Cross-Sections"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1973, pp 13-17

Abstract: The influence of different methods of heat treatment and of hot plastic deformation on the ductility, plasticity, and also on the state of the surface of fractures of OOOKh11N10M2T steel was experimentally determined. Hot-rolled rings, after water-hardening from 1200°C, rolling at 1050°C, hardening from 860°C, and aging at 500-525°C were found to possess tangentially high and axially satisfactory elasticity and ductility. Rings which were not preliminarily hardened from 1200°C differed little in plasticity and ductility from rings subjected to high-temperature hardening. Heat treatment (600°C for 2 hr or 600°C for 5 hr + 500°C for 2 hr) of hot-rolled rings for the ultimate strength  $\sigma = 120-130 \text{ kg/mm}^2$  raised ductility and plasticity of hot-rolled rings. The possibility was ascertained to increase the ductility and plasticity of OOOKh11N10M2T steel by heat treatment for  $\sigma = 135-150 \text{ kg/mm}^2$ , including aging at 600°C, hardening from 860°C, and aging at 500°C. Two figures, two tables, four bibliographic references.

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USSR

UDC 620.194

SHUSTOVA, Z. F., KUZNETSOV, G. G., ROZENFEL'D, I. L., and FRIDMAN, V. S., Academy of Sciences USSR, Institute of Physical Chemistry

"The Tendency of Type EP-65 Steel to Corrosion Cracking"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr, 1971, pp 183-187.

Abstract: The authors studied the tendency of specimens of EP-65 steel and welded joints of the steel to corrosion cracking, as well as methods of corrosion protection of this metal. EP-65 steel is a Martensitic steel based on 12% chromium with Ni, W, Mo and V. The tests were performed by periodic submersion in sea water, exposure to an atmospheric salt fog and exposure to a moist atmosphere without salt. The welded joints were found to be more inclined to corrosion cracking than the base metal. The main factor influencing the corrosion cracking of welded joints is the heat treatment used after welding, not the method of welding. Welded joints hardened in air from 1050° then tempered at 300° show corrosion cracking resistance almost as good as the base metal. The best protection for the metals and welded joints consists of a narrow strip of zinc coating on the welded joint, plus one base coat and three coats of enamel over the entire surface of the object.

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Radar

USSR

UDC 621.396.932.1

FRIDMAN, V. Ts.

"A Method of Determining the Overall Angular Error of a Radar Installation"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285071, Class 21, filed 10 Sep 68, published 29 Oct 70, p 47

Translation: This Author's Certificate introduces a method of determining the overall angular error of a radar installation by making statistical measurements and generalizing them over the entire angular zone. As a distinguishing feature of the patent, the procedure is designed to improve reliability and precision in error determination as well as to simplify the measurement process. The overall angular error is determined by generalization of a random (e. g. mean square) error of the radar installation due to fluctuations in target signals and mistakes by the operator, and also by generalization of an overall (e. g. systematic and mean square) instrument error in remote transmission of directions from the antenna to the display. The random angular error of the radar installation is determined by a series of measurements of the direction to some fixed target, while the overall instrument error is determined over the entire range of the angular zone.

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USSR

UDC 621.396.267:629.123.053

FRIDMAN, V. Ts., MALYSHEV, V. M., BLINOV, V. V.

"The 'Kivach-1' and 'Kivach-2' Marine Navigational Radar Systems"

Sudovyye navigatsionnyye radiolokatsionnyye stantsii "Kivach-1" i "Kivach-2" (cf. English above.), Moscow, "Pishch. prom-st", 1971, 168 pp., ill. 75 k. (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7G20 K)

Translation: The book contains information on the principles of design, on the operational and technical characteristics, construction and working principles of the "Kivach-1" and "Kivach-2" radar installations. The wiring connections, and the functional circuit of the radar installations are described together with schematic diagrams and the construction of the instruments. Rules are given for regulating and adjusting the radar installations on board the ship, day-to-day operation, technical servicing, and replacement of the units and modules of the installations. The distinctive features of the image on the screen are discussed, and recommendations are given on controlling and monitoring the operating condition of the station. Forty-seven illustrations, twenty-five tables, bibliography of thirteen titles. Annotation.  
1/1

Radar

USSR

UDC: 621.396.6:629.12

FRIDMAN, V. Ts., IGNAT'YEV, A. N.

"Analysis of Factors Which Determine the 'Dead Zone' of a Navigational Radar, and Ways of Reducing it"

Tr. TsNII Mor. flota (Works of the Central Scientific Research Institute of the Maritime Fleet), 1970, vyp. 124, pp 25-39 (from 12Zh-Radiotekhnika, No 12, Dec 70, Abstract No 12G109)

Translation: The authors discuss the electrical and structural characteristics of individual devices in marine navigational radar stations which affect the size of the "dead zone." The decisive factors are: the power of the reflected signal, which depends on the height at which the antenna is set, the radiation pattern and the angle of inclination in the vertical plane; the duration of the probing pulse; pickup from the video pulse of the transmitter modulator; the length of the waveguide channel; the effect of the reception device which causes elongation of the probing pulse; signal attenuation caused by the discharger and antenna switch in the SHF head; image scale and spot diameter on the CRT screen; instability of the synchronization system. Recommendations are given on weakening these factors while retaining the basic radar characteristics. A. K.

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ACC. NO.

Abstracting Service:

Ref. Code:

AP0049855 . CHEMICAL ABST. 5 170

4R 0075

93818x Determination of the equilibrium constants of mixed ligand complex formation from distribution data. Gidman, V. D.; Dolgashova, N. V. (Inst. Inorg. Phys. Chem., Frunze, USSR). Zh. Anal. Khim., 1970, 25(1), 26-9 (Russ). A method is suggested for the detn. of the equil. const. of the  $1/2MA_2 + 1/2MB_2 \rightleftharpoons MAB$  reactions from the data on the distribution of the complexes between 2 immiscible solvents. The equil. const. of the compd. formation of Cu with acetylacetone and 8-quinolinol in ethylene glycol and  $C_6H_6$  were found. The distribution method gives practically the same values for the equil. const. as the spectrophotometric method. Chaim Weiner

IB

REEL/FRAME  
19801780

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1/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--STABILITY IN SOLUTIONS OF COMPOUNDS OF NICKEL WITH AMINES -U-  
AUTHOR--(02)--FRIDMAN, YA.D., LEVINA, M.G.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 687-92  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--NICKEL COMPLEX, SPECTROPHOTOMETRIC ANALYSIS, PRIMARY AMINE,  
EQUILIBRIUM CONSTANT, ETHYLENEDIAMINE, QUINOLINE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1992/1866 STEP NO--UR/0073/70/015/003/0687/0692  
CIRC ACCESSION NO--AP0112846  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112846

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX FORMATION CONSTS. OF (NI(ET SUB2 NH) SUBM.(NH SUB3) SUBP (PY) SUBQ) PRIME2 POSITIVE (M EQUALS 1, 2, OR 3; P PLUS Q EQUALS 4 MINUS M), (NIPH SUB2 DIPY) PRIME2 POSITIVE, (NI L EN) PRIME2 POSITIVE, (NI L EN SUB2) PRIME2 POSITIVE AND (NI L SUB2 EN) PRIME2 POSITIVE (L EQUALS PH OR DIPY; DIPY EQUALS DIPYRIDYL) WERE DETD. BY DISTRIBUTION COEFF., PH TITRN., AND SPECTROPHOTOMETRIC METHODS AND THE RESULTS ARE TABULATED. EQUIL. CONSTS. (K) FOR THE REACTIONS OF BZNH SUB2, QUINDOLINE, OR PHNH SUB2 WITH NI COMPLEXES OF O PHENANTHROLINE OR ETHYLENEDIAMINE WERE DETD. SPECTROPHOTOMETRICALLY. K FOR THE REACTIONS OF THE FORMATION OF MIXED COMPLEXES (CONTG. ALIPHATIC AND AROMATIC OR HETEROCYCLIC AMINES) HAVE LOWER VALUES THAN DO K FOR AMINO COMPLEX FORMATION INVOLVING ONE TYPE OF AMINE ONLY. FACILITY: INST. NEORG. FIZ. KHIM., FRUNZE, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--FORMATION OF MIXED CHELATES IN WATER ACETONE SOLUTIONS -U-  
AUTHOR--FRIDMAN, YA.D., DOLGASHOVA, N.V. F  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(1) 395-400  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
  
TOPIC TAGS--CHELATE COMPOUND, ACETONE, COPPER COMPLEX, NICKEL COMPLEX,  
COBALT COMPLEX, ZINC COMPLEX  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1987/0311 STEP NO--UR/0078/70/015/002/0395/0400  
CIRC ACCESSION NO--AP0103966  
UNCLASSIFIED



2/2 008

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103966

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMATION OF MIXED CHELATE COMPLEXES (1-2 M<sub>A</sub> SUB2 PLUS 1-2 M<sub>B</sub> SUB2 EQUALS MAB) OF CU, NI, CO, OR ZN WITH ACETYLACETONE, HYDROXYQUINOLINE, CUPFERRON, ETHYLENEDIAMINE, PHENANTHROLINE, DIETHYLDITHIOCARBAMATE, SALICYLIC ACID, AND SULFOSALICYLIC ACID WAS DETD. SPECTROPHOTOMETRICALLY IN AQ. ME SUB2 CO SOLNS. THE CONSTS. OF MIXED COMPLEX FORMATION INCREASED WITH INCREASING CONCN. OF H SUB2 O IN THE SOLVENT. INDEPENDENT OF THE COMPN. AND CHARGE OF THE COORDINATION SPHERE, THE SOLVENT EFFECT WAS MORE PRONOUNCED WITH INCREASING DIFFERENCE OF ELECTRONEGATIVITY OF LIGAND PAIRS. THIS PHENOMENON IS DUE TO A CHANGE OF POLARITY OF COORDINATION BONDS DURING MIXED COMPLEX FORMATION.

UNCLASSIFIED

FRIDMAN, YE. I.

AAC046938

UR 0482

4

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

244507 MINIATURE VARIABLE CAPACITOR has stator plates which are covered on both sides by a solid dielectric film, except at the end where the connections are made. The films protrude over the metal plates where the rotor plates enter and are joined to form a leading edge. To eliminate electrostatic noise and reduce the absorption of moisture, a lubricant in the form of a molecular layer of polymethyl siloxane is applied to the surfaces of friction between the plates.

10.6.66 as 1081828/26-9. H.M.BELAYEV et al. (7.10.69)  
Bul 18/28.5.69. Class 21g. Int.Cl. H 01 g.

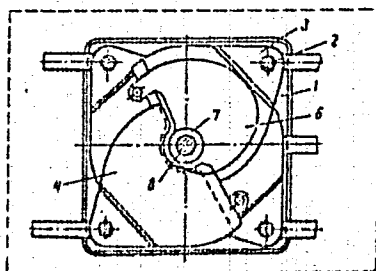
4

1/2

19790394

AA0046988

AUTHORS: Belvayev, M. M.; Vinogradova, T. F.; Goncharov, I. K.; Zamvatin, V. M.;  
Shcherbina, V. O.; Fridman, Ye. I.; El'kun, N. Ya.; Yernstova, V. I.



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19790395

Reaction Kinetics

USSR

UDC 533.66.063

BOKSHTEYN, B. S., VOROB'YEV, Ye. M., KLINGER, L. M., FRIDMAN, Ye. M., and SHVINDLERMAN, L. S., Academy of Sciences USSR, Institute of the Solid Body Physics, Moscow, Institute of Steel and Alloys

"Osmotic Effect at the Border Diffusion"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 47, No 1, Jan 73, pp 145-149

Abstract: A model of boundary diffusion was developed with consideration of the formation of an effect analogous to the osmotic one. As a result, formation of dislocations takes place in the boundary zones which accelerates the diffusion inside the grain and with its motion carrying the atoms of the admixture. A self-adjusted system of equations was derived which describes the process under analysis.

1/1

1/2 036 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--MATHEMATICAL PROCESSING OF SATELLITE CLOUD PICTURES -U-  
AUTHOR--(02)-SHIFRIN, K.S., FRIDMAN, YU.S.  
COUNTRY OF INFO--USSR  
SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 6, PP 25-34  
DATE PUBLISHED-----70  
SUBJECT AREAS--SPACE TECHNOLOGY, ATMOSPHERIC SCIENCES, METHODS AND  
EQUIPMENT  
TOPIC TAGS--SPACEBORNE ATMOSPHERIC PHOTOGRAPHY, ATMOSPHERIC CLOUD, TV  
PHOTOGRAPHY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1765 STEP NO--UR/0050/70/000/006/0025/0034  
CIRC ACCESSION NO--AP0125381  
UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--23OCT70  
CIRC ACCESSION NO--AP0125381  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MAINLY GEOMETRICAL METHODS OF  
INVESTIGATING TV CLOUD PICTURES REPRESENTED IN A DIGITAL FORM ARE  
CONSIDERED IN THE ARTICLE. ALGORITHMS OF SEARCHING FOR CONTOUR LINES,  
LINES OF THE BRIGHTNESS LEVEL AND THEIR MUTUAL DISPOSITION ARE OUTLINED.  
SOME TOTALITIES OF CLOUD FORM PARAMETER ARE PROPOSED WHICH ARE  
CONSIDERED AS GEOMETRICAL FIGURES OF THE ARBITRARY FORM. EXAMPLES OF  
STATISTICAL PROCESSING OF PICTURES AND THEIR MACHINE CLASSIFICATION ARE  
GIVEN. FACILITY: GLAVNAYA GEOFIZICHESKAYA OBSERVATORIYA.

UNCLASSIFIED

USSR

UDC 669.3+669.27].018.95

IVANOVA, V. S., FRIDMAN, Z. B., and GVOZDYK, V. G.

"Investigation by Means of High-Temperature Metallography of the Failure Macromechanism of Copper Reinforced With Tungsten Wire"

V sb. Novyye napravleniya razvitiya vysokotemperaturn. metallogr. (New Trends in Development of High-Temperature Metallography -- Collection of Works), Moscow, "Mashinostroyeniye" (Machine-Building), 1971, pp 144-147 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 11738 by authors)

Translation of Abstract: The authors present results of an investigation, by means of high-temperature metallography, of the macromechanism of breaking strain of copper reinforced by a net and unidirectional fibers of tungsten. Reinforcement of Cu with a net is more effective than reinforcement with unidirectional fibers from the standpoint of high-temperature strain resistance. Two illustrations. Bibliography with four titles.

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USSR

UDC 539.4.015

GUREVICH, S. YE., MAR'YANOVSKAYA, T. S., and FRIDMAN, Z. G., Moscow

"The Use of Rupture Viscosity Data in Predicting the Effectiveness of Increasing Heat Resistance in Thermoplastic Strengthening"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May/Jun 73, pp 142-144

Abstract: In order to establish the possibility of using plastic deformation ( $\epsilon_k^k$ ) for evaluating the maximal stress-rupture strength, the rupture viscosity ( $K_{1C}^Q$ ) and the stress-rupture strength of 1Kh18N12T steel were determined after the mechanical thermal treatment (MTT) in 100, 1000, and 10,000 hours. Deformation of this steel during MTT was accomplished at 200°C after which it was subjected to polygonization annealing at 600°C for 100 hours. The stress-rupture test was carried out at 600°C. The results indicated that the value of  $K_{1C}^Q$  gradually increases with increasing plastic deformation until it reached a certain critical deformation ( $\epsilon_k^k$ ) corresponding to 11%. At this point changes in  $K_{1C}^Q$  took place. In every instance the stress-rupture strength increased with increasing deformation extent produced by MTT. Its maximum values were reached at deformation equaling the  $\epsilon_k^k$ . When deformation exceeded the critical limit, the stress-rupture strength decreased in the course of testing for 1000 and 10,000 hours.

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USSR

UDC: 539.385

FRIDMAN, Z. G. and VEYTSMAN, M. G., Institute of Metallurgy  
imeni A. A. Baykov, Academy of sciences USSR

"Effect of Mechano-thermal Treatment of the Cyclic Strength  
of 1Kh18N9 Steel Sheets"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press,  
1971, pp 97-102

Translation: The paper discusses the effect of single and fractional mechano-thermal treatments (MTT) combined with deformation at 10 and 20% under tensile and rolling conditions. As a result of this type of treatment the cyclic strength of 1Kh18N9 steel sheets increased by more than 30%. Fractional MTT appears to be more effective as compared to simple treatments for the same deformation ratios. The increase in cyclic strength following MTT is shown to be related to the decrease in surface strain and to the formation of a cellular structure. (3 illustrations, 2 tables, 5 bibliographic references; summary).

1/1

USSR

UDC 539.4:536.453

IVANOVA, V. S., ~~FRIDMAN, Z. G.~~, GVOZDYK, V. G.

"Study of the Macromechanism of the Breakdown of Copper Reinforced With Tungsten Wire Using High Temperature Metallography"

V sb. Novyye napravleniya razvitiya vysokotemperaturn. metallogr. (New Trends in the Development of High Temperature Metallography -- Collection of Works), Moscow, "Mashinostroyeniye", 1971, pp 144-147 (from *REh-Mekhanika*, No 12, Dec 71, Abstract No 12V1554)

Translation: The results of a study of the macromechanism of the breakdown deformation of copper reinforced by a grid and one-directional wires using high-temperature metallography are presented. It is shown that reinforcement of the copper with a grid is more effective in comparison to reinforcement with unidirectional wires from the aspect of resistance to high-temperature deformation. Authors' abstract.

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USSR

UDC 629.113.4; 621.438

FRIDRIKH, A. M., Candidate of Technical Sciences, FREYMAN, Yu. I., Candidate of Technical Sciences

"Deceleration Characteristics of Gas-Turbine Engines With Controllable Guide Vane Assembly"

Moscow, Izvestiya VUZov: Mashinostroyeniye, No 7, 1973, pp 88-92

Abstract: The authors consider the braking characteristics of a two-shaft gas turbine engine with controllable guide vane register on a free traction turbine based on the results of special tests of flat registers with very large vane setting angles. Quantitative characteristics and the most important physical peculiarities of the working process of the engine are analyzed during deceleration and reverse. The conclusions drawn are favorable for the braking action of gas turbine engines in heavy trucks.

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USSR

UDC 621.375.8

FRIDRIKHOV, S. A., FOTIADI, A. E., and YELAGIN, V. V.

"Investigation of the Radiation Intensity of an Argon Laser With an Argon Cell Inside the Resonator"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 15, No 3, Sep 71, pp 539-542

Abstract: The authors cite the results of an experimental investigation of the radiation intensity of a continuous argon laser with an argon cell inside the resonator. They found that, depending on the argon pressure in the cell, it reveals either amplifying or absorbing properties. They also established that increasing the discharge current in the cell leads to an amplification of the observable effect (amplification and absorption) determined by the pressure. Three figures are used to graphically demonstrate their findings. Figure 1 shows the dependence of amplification and absorption on discharge current in the cell. Figure 2 shows the same dependence for intensity of laser radiation rather than for argon pressure. Figure 3 is a graphic illustration of the amplification and absorption as a function of laser radiation intensity for discharge currents in the cell. As a result of the investigation the authors established the possibility of designing an argon laser using an argon, nonlinearly absorbing cell; they found that the argon

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USSR

FRIDRIKHOV, S. A., et al., Zhurnal Prikladnoy Spektroskopii, Vol 15, No 3, Sep 71, pp 539-542

atmosphere begins to exhibit absorption properties at pressures greater than 1.1 mm Hg; at pressures on the order of 1.1 mm Hg the Ar discharge in the 3 mm capillary is transparent to radiation at  $\lambda = 4880 \text{ \AA}$ , thus indicating an approximate equality of the lifetime of the 4p and 4s states of the Ar ion. The article contains 3 illustrations and 6 bibliographic entries.

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USSR

UDC 537.533.2+537.534

FRIDRIKHOV, S. A., SHOYKHET, F. N.

"Effect of an Electric Field on Secondary Electron Emission of Alkali-Halide Films"

Tr. Leningr. politekhn. in-ta (Works of Leningrad Polytechnical Institute), 1970, No 311, pp 29-40 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12Zh658)

Translation: It was shown that in the case of porous alkali-halide layers (NaCl, KCl) the coefficient of inertialess secondary electron emission for reflection by an intensified field  $\sigma_e$  can reach several tens (up to 80) for an energy of the primary electrons of several kev (in a mode of single pulses of the primary current of duration  $\sim 1$   $\mu$ sec). The dependence of  $\sigma_e$  on the energy of the primary electrons  $E_p$  has an anomalous nature (with two maxima);  $\sigma_e$  depends considerably on the porosity of the film. The greatest values of  $\sigma_e$  were obtained in the case

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USSR

FRIDRIKHOV, S. A., SHOYKHET, F. N., Tr. Leningr. politekhn. in-ta, 1970,  
No 311, pp 29-40

of porous alkali-halide films deposited on Pt-substrates in an atmosphere of  
Ar at a pressure of several mmHg. High-frequency oscillations (instabilities)  
were observed in the current flowing in the target circuit. 20 references.  
Authors abstract.

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1/2 036 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--EFFECT OF A TRANSVERSE MAGNETIC FIELD ON THE OPERATION OF A CW  
ARGON LASER -U-  
AUTHOR--(02)-FGTIADI, A.E., FRIDRIKHOV, S.A. **F**  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL PRIKLAADNOI SPEKTRGSKOPII, VOL. 12, APR. 1970, P. 743-745  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--CW LASER, ARGON LASER, TRANSVERSE MAGNETIC FIELD, LIGHT  
POLARIZATION, VECTOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1316 STEP NC--UR/0368/70/012/000/0743/0745  
CIRC ACCESSION NO--AP0124967

UNCLASSIFIED



2/2 036

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124967

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF CERTAIN ASPECTS OF THE EFFECT OF A TRANSVERSE MAGNETIC FIELD ON THE OPERATION OF AN ARGON LASER WITH BREWSTER WINDOWS. IT IS SHOWN THAT, REGARDLESS OF THE ORIENTATION OF THE BREWSTER WINDOWS, THE RADIATION OF SUCH A LASER REMAINS LINEARLY POLARIZED, THE DIRECTION OF POLARIZATION BEING DETERMINED BY THE ORIENTATION OF THE BREWSTER WINDOWS RELATIVE TO THE MAGNETIC FIELD STRENGTH VECTOR. IN COMPARING THE DEPENDENCES OF THE OUTPUT POWER ON THE LONGITUDINAL AND TRANSVERSE MAGNETIC FIELD STRENGTHS, IT IS NOTED THAT THE INCREASE IN RADIATION INTENSITY OCCURRING DURING A CHANGE IN THE STRENGTH OF EITHER A LONGITUDINAL OR TRANSVERSE MAGNETIC FIELD FROM ZERO TO 90 DE CANNOT BE ATTRIBUTED MERELY TO AN INCREASE IN THE NUMBER OF DIPS ON THE AMPLIFICATION CONTOUR. IT IS CONCLUDED THAT THIS INCREASE IS RELATED TO A CERTAIN HITHERTO UNKNOWN MECHANISM WHICH LEADS TO AN INCREASE IN THE AMPLIFICATION FACTOR OF IONIZED ARGON IN SMALL MAGNETIC FIELDS.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--ELECTROSURFACE PHENOMENA IN DISPERSED SYSTEMS -U-  
AUTHOR--(02)-GRIGOROV, O.N., FRIDRIKHSBERG, D.A.  
COUNTRY OF INFO--USSR  
SOURCE--VESTN. LENINGRAD. UNIV., FIZ., KHIM. 1970, (1), 100-22  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ELECTROOSMOSIS, ION EXCHANGE MEMBRANE, SURFACE PROPERTY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1999/1783 STEP NO--UR/0056/70/000/001/0100/0122  
CIRC ACCESSION NO--AP0123580

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123580

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPROX. 20 STUDIES ORIGINATING FROM LENINGRAD UNIVERSITY ON ELECTROOSMOSIS (MOTION OF 2 PHASE MIXTS. IN POROUS MEDIA, ELECTROSMOTIC DRYING), STREAMING POTENTIALS, POLARIZATION PHENOMENA ON ION EXCHANGE MEMBRANES, AND ELECTROKINETIC PHENOMENA IN FLUIDIZED MIXTS. OF SOLID PARTICLES AND IN CAPILLARIES OF REGULAR GEOMETRY ARE SUMMARIZED.

UNCLASSIFIED

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USSR

UDC: 621.315.592

MEN'SHIKOVA, V. A., ORLOV, L. S., ZATULOVSKIY, L. M., CHAYKEN, P. K.,  
FRIMER, A. I., All-Union Scientific Research Institute of Electrothermal  
Equipment

"Feasibility of Making Photodiodes Based on Single Crystal Germanium  
Strips Grown by the Stepanov Method"

Moscow, Izv. AN SSSR, Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 525-528

Abstract: A study is made of the possibility of growing gallium arsenide epitaxially on germanium single crystal strips, and producing photodiodes from the resultant structures. The single crystal germanium strip was grown by the Stepanov method, using a floating shaper and a seed holder on a flexible suspension. A gas-transport reaction in an open tube was used for growing the epitaxial layer of gallium arsenide. The pn junction was formed by arsenic diffusion. Mesa photodiodes were made by photolithography. It was found that the integral sensitivity of photodiodes based on single crystal strips is greater than that of diodes based on ordinary germanium. This is attributed to the thinner epitaxial layer of GaAs since losses of light are proportional to the thickness of this layer. This is confirmed by spectral characteristics.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--ANAEROBIC SPLITTING OF CARBOHYDRATES AND THE ACTIVITY OF THE  
ENZYMES IN THROMBOCYTES DURING HEMORRHAGIC THROMBOCYTEMIA -U-  
AUTHOR-(03)-CHERNYAK, N.B., TIMOFEYEVA, L.M., FRINOVSKAYA, I.V.

COUNTRY OF INFO--USSR

SOURCE--PROBL GEMATOL PERELIV KROVI 15(2): 44-49. 1970.

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ENZYME ACTIVITY, THROMBOCYTE, ADENOSINE TRIPHOSPHATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605015/812 STEP NO--UR/9080/70/015/002/0044/0049

CIRC ACCESSION NO--AP0140561

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--040601

CIRC ACCESSION NO--AP0140561

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE THROMBOCYTES OF 13 PATIENTS SUFFERING FROM HEMORRHAGIC THROMBOCYTEMIA THERE WAS A LESS INTENSIVE ACCUMULATION OF THE LACTATE IN THE ANAEROBIC, AND, ESPECIALLY, IN THE AEROBIC CONDITIONS IN COMPARISON WITH DONOR THROMBOCYTES. THE ACTIVITY OF HEXOKINASE, GLUCOSE-6-PHOSPHATE DEHYDROGENASE, PHOSPHOGLYCERATE ALDEHYDE DEHYDROGENASE, AND OF LACTATE DEHYDROGENASE SHOWED NO SIGNIFICANT DEVIATION FROM THE NORMAL. THE CONTENT OF ATP WAS REDUCED OR WITHIN THE NORMAL RANGE, THE ADP CONTENT WAS REDUCED; IN THIS CONNECTION THE ATP-ADP RATIO WAS CONSIDERABLY INCREASED IN COMPARISON WITH THE NORMAL LEVEL. ENDOGENOUS ATP IN THE PATIENTS' THROMBOCYTES SPLIT IN INCUBATION MORE INTENSIVELY THAN IN THE THROMBOCYTES OF HEALTHY PERSONS. FACILITY: CENT. INST. HEMATOL. BLOOD TRANSFUS., MIN. HEALTH USSR, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 669.721:621.762

KVATER, L. I., FRISHBERG, I. V., Sverdlovsk

"Dispersion of Magnesium Powder Produced by Vacuum Condensation"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 91-95.

Abstract: This article presents results concerning the influence of a number of technological parameters such as evaporation temperature, cooling agent temperature and residual gas pressure on the dispersion and the shape of particles of metallic magnesium condensing in the volume and on the surface. The study of the process of vacuum condensation of magnesium on a cooled moving surface showed the complexity of the powder-formation mechanism, combining crystallization of particles in the volume with growth of crystals on the surface. Increasing the evaporation temperature, with other parameters constant, improves the conditions for surface growth of crystals, reducing the dispersion of the powder and changing the form of its particles. A simultaneous increase in evaporation temperature and increase in residual pressure in the system helps to form a coarse powder. Increasing the temperature of the crystallization surface results in the formation of a powder which is more homogeneous in shape and size and more highly dispersed. In many modes of condensation, a homogeneous powder with particle sizes of 0.1-0.2  $\mu$  can be produced.

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I/2 045 UNCLASSIFIED PROCESSING DATE 11-15-70  
TITLE--DISPERSION OF AN INERTIAL IMPURITY OF VARIOUS PARTICLE SIZE IN A  
TWO PHASE AXISYMMETRIC JET -U-  
AUTHOR-(02)-LAATS, M.K., FRISHMAN, F.A. F  
COUNTRY OF INFO--USSR  
SOURCE--INZHENERNO-FIZICHESKII ZHURNAL, VOL. 18, APR. 1970, P. 643-647  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--IMPURITY LEVEL, TURBULENT FLOW, NOZZLE, NOZZLE FLOW, PARTICLE  
DIFFUSION, PARTICLE DISTRIBUTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/1262 STEP NO--UR/0170/70/018/000/0643/0647  
CIRC ACCESSION NO--AP0124913  
UNCLASSIFIED



2/2 045

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124913

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL INVESTIGATION OF THE DISPERSION OF A PULVERIZED IMPURITY CONTAINING PARTICLES OF VARIOUS SIZE IN A TWO PHASE JET. IT IS FOUND THAT THE IMPURITY IS UNIFORMLY DISTRIBUTED OVER THE INITIAL CROSS SECTIONS OF THE JET, BUT THAT THE DISPERSION INTENSITY DEPENDS STRONGLY ON THE INITIAL IMPURITY CONCENTRATION AND PARTICLE SIZE. THE EXPERIMENTAL DATA INDICATE THAT IN ADDITION TO TURBULENT TRANSPORT, THE RELATIVE TRANSVERSE MOTION OF THE PARTICLES HAS AN APPRECIABLE EFFECT ON THE DISPERSION OF THE IMPURITY NEAR THE NOZZLE. THIS IS ATTRIBUTED TO THE PRESENCE OF A LIFTING FORCE GENERATED BY PARTICLES ROTATING IN THE FLOW. FACILITY: AKADEMIIA NAUK ESTONSKOI SSR, INSTITUT TERMOFIZIKI I ELEKTROFIZIKI, TALLIN, ESTONIAN SSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--PRINCIPLES AND METHODS OF MODERN THERAPY OF SYPHILITIS AORTITIS -U-  
AUTHOR--FRISHMAN, M.P. *F*  
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 5, PP 47-51  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--VENEREAL DISEASE, CARDIOVASCULAR SYSTEM  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1998/2050 STEP NO--UR/0206/70/000/005/0047/0051  
CIRC ACCESSION NO--AP0122279  
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122279

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MAIN PRINCIPLES AND METHODS OF MODERN THERAPY OF SYPHILITIS AORTITIS IN RELATION TO THE FORM OF AORTITIS AND THE EXTENT OF THE CARDIO VASCULAR INSUFFICIENCY ARE DESCRIBED. FACILITY: SIFILIDOLOGICHESKIY OTDEL KHAR'KOVSKOGO N-I INSTITUTA DERMATOLOGII I VENEROLOGII.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--IN VITRO EFFECT OF SEMI SYNTHETIC PENICILLINS ON ORGANISMS CAUSING  
SURGICAL INFECTIONS -U-  
AUTHOR-(05)-VASINA, T.A., FRISHMAN, YE.M., VEDMINA, YE.A., GAMALEYA, L.A.,  
MIKHEYEVA, YE.V.  
COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 528-532

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PENICILLIN, STAPHYLOCOCCUS INFECTION, TETRACYCLINE, ANTIBIOTIC  
RESISTANCE/(U)AMPICILLIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/2002

STEP NO--UR/C297/70/015/006/0528/0532

CIRC ACCESSION NO--AP0125591

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125591

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NARROW AND BROAD SPECTRUM SEMISYNTHETIC PENICILLINS WERE STUDIED WITH RESPECT TO THEIR EFFECT ON STAPHYLOCOCCI CAUSING SURGICAL INFECTIONS. IT WAS SHOWN THAT MOST OF THE ISOLATES WERE MAINLY RESISTANT TO THE WIDELY USED ANTIBIOTICS (BENZYL PENICILLIN 87 PER CENT, TETRACYCLINES 56 TO 70 PER CENT). IN VITRO STUDIES ON THE EFFECT OF SEMISYNTHETIC PENICILLINS DEMONSTRATED THAT IN SPITE OF A SHORT PERIOD OF THEIR USE IN MEDICAL PRACTICE, STRAINS RESISTANT TO THE ANTIBIOTIC CONCENTRATIONS IN THE HOST OCCURRED ALONG WITH SENSITIVE CULTURES (NARROW SPECTRUM SEMI SYNTHETIC PENICILLINS 19.2 TO 28.4 PER CENT, PYOPEN 18 PER CENT, AMPICILLIN 39.5 PER CENT). FACILITY: INSTITUTE FOR CLINICAL AND EXPERIMENTAL SURGERY, CENTRAL POST GRADUATE MEDICAL INSTITUTE, MOSCOW.

UNCLASSIFIED

Acc. Nr: AP0101135

Ref. Code: UR4297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 3, pp 267-271

EFFECT OF ANTIBIOTIC COMBINATIONS ON PATHOGENIC STAPHYLOCOCCI  
ISOLATED FROM SURGICAL CASES

Ye. M. Frishman, Ye. A. Vedmina, O. A. Fedorova, T. A. Vasina

Microbiology Chair of Central Post-Graduate Medical Institute, Sanitary Epidemiological  
Station of the Kalinin Region, Moscow

The effect of 15 combinations of penicillin with other antibiotics on 50 strains of pathogenic staphylococci, isolated from surgical cases was studied in vitro. The analysis of the data obtained during the study of the combinations and their components with the use of various criteria, such as ranges of minimum inhibitory concentrations, bacteriostatic concentrations with respect to most strains, nature of the combined effect, showed 3 double combinations of penicillin with monomycin, chlortetracycline or dichlortetracycline, as well as 1 triple combination of penicillin with pasomycin and dichlortetracycline to be favourable with respect to their effect on pathogenic staphylococci. A significant decrease in the efficacy of penicillin used in combination with erythromycin, oleandomycin or ceporin was observed.

REEL/FRA  
19850760

USSR

UDC 577.4

FRITSNOVICH, G. F.

"Coding the Internal States of Asynchronous Finite Automata with an n-code of Minimal Length"

V sb. Teoriya Konech Avtomatov i Yeye Pril. (Theory of Finite Automata and its Applications--collection of works), first edition, Riga, Zinatne, 1973, pp 23-24 (from RZh Matematika, No 11, Nov 73, Abstract No 11 V522

Translation: A method is suggested for coding the internal states of an asynchronous finite automaton, based on reducing the problem of coding to coloring the vertices of a finite nonoriented graph. This method makes it possible to construct a code of minimal length, eliminating dangerous competition among intermediate variables in the absence of a limit on the speed of the designed apparatus, and does not require preliminary finding of sets for all maximal combinations (all possible positions of the code). This makes it possible to reduce the volume of intermediate information storage and the overall difficulty of solving the coding problem.

Abstract by the author.

1/1

- 10 -

USSR

UDC: 519.1

PETRENKO, A. F., FRITSNOVICH, G. F.

"Synthesis of Asynchronous Finite Automata With Regard to Reducing the Number of Filters"

Avtomatika i vychisl. tekhn. (Automation and Computer Technology), 1972, No 6, pp 19-22 (from RZh-Kibernetika, No 5, May 73, abstract No 5V548 by the authors)

Translation: The paper deals with the possibilities of reducing the total number of filters necessary for eliminating dangerous competitions in synthesizing asynchronous finite automata given by normal tables of transitions.

1/1



USSR

UDC 577.4

FRITSNOVICH, G. F., YAKOBZON, M. I.

"Minimizing the Method of States of a Finite Automaton"

V sb. Vopr. sinteza konechn. avtomatov (Problems of Synthesizing Finite Automata -- collection of works), Riga, Zinatne Press, 1972, pp 27-32 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V407)

No abstract

1/1

USSR

UDC 517.946

FROIM, V. Kh.

"Linear, Scalar, Partial Differential Equations With Regular Singularities in the Hyperplane"

Minsk, Differentsial'nyye Uravneniya, No 3, 1973, pp 533-541

Abstract: This paper is partially based on an earlier article by the same author named above (Sibir. matem. zhurnal, vol 11, No 3, 1970) studying equations of the type

$$\sum_{\nu=0}^n \frac{A^{\nu_0 \nu_1 \dots \nu_m}(z, \zeta)}{z^{n-\nu_0-1} \delta_{\nu_0}^{\nu}} \cdot \frac{\partial^{\nu} W(z, \zeta)}{\partial z^{\nu_0} \partial \zeta_1^{\nu_1} \dots \partial \zeta_m^{\nu_m}} = 0,$$

$A^{n0 \dots 0}(z, \zeta) \equiv 1$ ,  $A^{i0 \dots 0}(0, \zeta) = A_0^{i0 \dots 0} \equiv (\text{const})_i$  ( $i = 0, 1, \dots, n$ )

and  $\nu \equiv \nu_0 + \nu_1 + \dots + \nu_m$ ,  $\delta_k^i = \begin{cases} 1, & \text{if } i = k, \\ 0, & \text{if } i \neq k. \end{cases}$  It is shown that

solutions of this equation which are analytic in the neighborhood  $1/2$

USSR

FROM, V. Kh., *Differentsial'nyye Uravneniya*, No 3, 1973, pp 533-541

of points in the hyperspace  $z = 0$  permit the same singularities for the argument  $z$  as the solutions of the above equation, for  $m = 0$ , in the neighborhood of the point  $z = 0$ . The behavior of the solutions to the above equation is examined in the neighborhood of the origin of coordinates.

2/2

- 9 -

USSR

UDC 621.771.23:621.771.011

ZHELEZNOV, Yu. D., PAVLOV, I. M., YARGSTORF, P., GRICORYAN, G. G., and FROINDEL', P., Moscow Institute of Steel and Alloys

"The Effect of Outer Parts on the Edgewise Deformation in the Light-Gauge Sheet-Rolling Process. First Report"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy — Chernaya Metallurgiya, No 11, 1970, pp 81-85

Abstract: The interaction mechanism of outer parts with the deformation source in the process of light-gauge sheet rolling is discussed from the viewpoint of the edgewise interaction of internal longitudinal stresses. The physical interpretation of this interaction is discussed by reference to diagrams showing the alignment process of the transverse difference of thickness of a band and the relation between the irregularity of the edgewise deformation and internal stresses. Experimental data show that with increasing length of the band, the transverse difference of thickness decreases in the beginning and then becomes constant. A function is derived from which a coefficient characterizing the capacity of self-alignment from externally acting parts can be determined. A comparison of experimental and theoretical rolling data is presented.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--EFFECT OF THE TYPE OF ADHESIVE AND THE MODIFICATION OF RUBBERS ON  
THE BONDING STRENGTH OF RUBBER CORD SYSTEMS -U-  
AUTHOR--(05)-OCSTYAN, M.S., UZINA, R.V., SHVARTS, A.G., TUNANGVA, A.I.,  
FROLIKOVA, V.G.  
COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(2), 29031

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ADHESIVE, BONDING STRENGTH, METHACRYLIC ACID, RESORCINOL,  
FORMALDEHYDE, CARBOXYLATE RUBBER, PYRIDINE, LATEX, CORDAGE, MOTOR  
VEHICLE TIRE, STATISTIC ANALYSIS/(U)FR12 RESORCINOL FORMALDEHYDE,  
(U)SKD1 CARBOXYLATE RUBBER, (U)DSVP15 VINYL PYRIDINE LATEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1993/0388

STEP NO--UR/0138/70/029/002/0029/0031

CIRC ACCESSION NO--AP0113306

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113306

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPUTER ASSISTED STATISTICAL ANAL. OF A SET OF PLANNED EXPTS. GAVE THE OPTIMUM AMTS. OF MODIFIER RU-1, METHACRYLIC ACID (I), AND FR-12 (RESURCINOL HCHO RESIN) IN CARBOXYLIC LATEX SKD-1 AND LATEX OSVP-15 CONTG. VINYLPIRUVINE GROUP. THE OPTIMUM FILLER AMTS. GIVE THE HIGHEST BONDING STRENGTH BETWEEN THESE LATEXES (WHEN CURED) AND THE TIRE CARCASS CORDS. THE RESULTS ARE PRESENTED IN THE FORM OF THE REGRESSION EQUATIONS AND GRAPHS.

FACILITY: NAUCH.-ISSLED. INST. SHINNOI PROM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.317.784.023(088.8)

KARPOV, R. G., GRUZDEV, S. V., FROLIN, M. I., OSOKIN, V. I., DUBOVOY, N. D.

"Superhigh Frequency Power Meter"

USSR Author's Certificate No 272400, Filed 29 Apr 68, Published 22 Sep 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A283P)

Translation: A superhigh frequency power meter comprising a self-balancing bolometric bridge with an oscillator in the autobalancing circuit is proposed. The proposed meter is distinguished by the fact that in order to improve the meter sensitivity a pulse oscillator with constant amplitude and regulatable repetition rate is used as the oscillator. Its modulation characteristic depends on the peak value of the control pulse amplitude.

1/1

USSR

UDC: 621.326.6-161.5

F  
FROLIN, M. I., TLOSTANOV, Yu. K., BURLAKOV, V. D.

"Errors in Measuring the Parameters of Thin-Film Microcircuits"

Tr. Ryazansk. radiotekhn. in-ta (Works of the Ryazan Radio Engineering Institute),  
1970, vyp. 23, pp 85-89 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7V260)

Translation: The paper contains an analysis of errors in indirect determination of the parameters of thin-film microcircuits. Relationships are derived which can be used to determine the optimum conditions for measurements and minimize measurement error. Resumé.

1/1



USSR

UDC: 621.329.6-181.5

F  
FROLIN, M. I., TLOSTANOV, Yu. K., BURLAKOV, V. D.

"Indirect Method of Measuring the Parameters of Thin-Film Microcircuits"

Tr. Ryazansk. radiotekhn. in-ta (Works of the Ryazan Radio Engineering Institute),  
1970, vyp. 23, pp 76-85 (From RZh-Radiotekhnika, No 7, Jul 70, Abstract No 77260)

Translation: The paper considers the possibilities of using the theory of linear two-terminal pair networks for measuring the parameters of thin-film micromodules. The method is substantiated and the necessary relationships are given as well as the results of an experimental check. It is pointed out that this checking method may be used to determine the parameters of thin-film micromodules with inaccessible points. Resumé.

1/1

USSR

UDC 615.472:616.12-008.1-78

BELILOVSKIY, M. A., BERGER, I. I., ~~FROLKIN, O. A.~~, STETSIN, A. A., TROFIMOVA, G. N., and GUSMAN, V. Ye., All Union Scientific Research Institute for Medical Instrumentation, Moscow

"The Biopulse-2, an Apparatus for Auxiliary Blood Circulation"

Moscow, Meditsinskaya Tekhnika, No 4, 1971, pp 14-19

Abstract: The Biopulse-2 is an electromagnetic pump with bioelectric control designed to provide auxiliary blood circulation in different kinds of cardiac insufficiency in order to relieve the heart and increase the venous blood flow. The apparatus consists of a cardiac biopotential amplifier, control unit, power amplifier, motor with a pump, and power supply. The biopotential amplifier collects and processes biological information. The control unit regulates the pulsating current. The power amplifier boosts the pulsating current of low-power electrical energy while the electromagnetic motor with a diaphragm pump head transforms the electrical energy into mechanical energy to move the blood.

1/1

1/2 035 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--PHASE TRANSFORMATIONS OF GADOLINIUM MOLYBDATE AND ISOSTRUCTURAL  
COMPOUNDS -U-  
AUTHOR--DROBYSHEV, L.A., FROLKINA, I.T., PONOMAREV, V.I., TOMASHPOLSKIY,  
YU.YA., VENEVTSEV, YU.N.  
COUNTRY OF INFO--USSR  
SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 68-74  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, PHYSICS  
TOPIC TAGS--PHASE TRANSFORMATION, X RAY ANALYSIS, MECHANICAL PROPERTY,  
ELECTRICAL PROPERTY, MOLYBDATE, GADOLINIUM COMPOUND, EUROPIUM, TERBIUM,  
DYSPROSIUM, HOLMIUM, NEDDYMIUM LASER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1984/0117 STEP NO--UR/0070/70/015/001/0068/0074  
CIRC ACCESSION NO--AP0054913  
UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0054913

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHASE TRANSFORMATIONS OF THE L  
MODIFICATION OF GD, EU, Tb, Dy, AND Ho MOLYBDATE USED FOR QUANTUM  
ELECTRONICS WERE INVESTIGATED BY USING X RAY AND THERMOGRAPHIC METHODS.  
A RELATION WAS ESTABLISHED BETWEEN THE STRUCTURAL CHANGES AND PHYS.  
PROPERTIES OF THESE COMPODS. THE OCCURENCE OF SEIGNETTE ELEC. PROPERTIES  
WERE NOTED IN THE TETRAGONAL L MODIFICATIONS OF EU, Tb, Dy, AND Ho  
MOLYBDATE AT IS LESS THAN 192, 165, 158 AND 134DEGREES, AND ON THIS  
BASIS, THE POSSIBILITY WAS CONSIDERED OF USING THESE COMPODS. AS ACTIVE  
MATERIALS FOR Nd ACTIVATED LASERS, THE MAGNETIC ORDERING OF THESE  
COMPODS. AT DEFINITE TEMPS. WAS ALSO CONSIDERED. THE TEMP. CHANGES OF 2  
TYPES OF PHASE TRANSFORMATIONS (SEIGNETTE ELEC. AND TRANSFORMATIONS WITH  
CRYSTAL DECAY) WERE DEPENDENT ON THE AT. NO. OF THE RARE EARTH ELEMENT.  
THE EXISTENCE OF A GD SUB2(MOO SUB4) SUB3 TETRAGONAL MODIFICATION WITH  
ALPHA EQUALS 7.25 AND C EQUALS 10.58 ANGSTROMS WAS ALSO VERIFIED.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--CLINICAL ASSESSMENT OF SOME MEANS OF DIAGNOSING THE DISORDERS OF  
THE ABSORPTIVE FUNCTION OF THE INTESTINE -U-  
AUTHOR-(02)-FROLKIS, A.V., BELENKAYA, T.YU.  
COUNTRY OF INFO--USSR  
SOURCE--TERAPECTICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 36-40  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--SMALL INTESTINE, DIGESTIVE DISEASE, ABSORPTION, DIAGNOSTIC  
MEDICINE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/0811 STEP NO--UR/0504/70/042/003/0036/0040  
CIRC ACCESSION NO--AP0102773  
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102773

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTIVE FUNCTION OF THE SMALL INTESTINE WAS STUDIED IN 82 PATIENTS WITH CHRONIC ENTEROCOLITIS. THE AUTHORS USED THE METHOD AFTER VAN DE VAMER, THE RADIOISOTOPE METHOD, TEST TO LIPIODOL ABSORPTION, TEST WITH D,XYLOSE LOAD, GLUCOSE TEST, AND THE IODINE POTASSIUM TEST. THE PERORAL VARIANT OF THE IODINE POTASSIUM TEST IS RECOMMENDED AS A TENTATIVE TEST FOR INVESTIGATING THE ABSORPTIVE FUNCTION OF THE INTESTINE. TO STUDY LIPIDS ABSORPTION THE CHEMICAL METHOD AFTER VAN DE VAMER AND THE METHOD OF RADIOINDICATION WITH THE AID OF LABELLED LIPIDS ARE THE MOST RELIABLE ONES. THE LIPIODOL TEST PROVED TO BE USELESS TO REVEAL DISORDERS OF INTESTINAL ABSORPTION IN PATIENTS WITH CHRONIC ENTEROCOLITIS. THE D,XYLOSE TEST IS A SUFFICIENTLY PRECISE TECHNIQUE OF INVESTIGATION OF CARBOHYDRATE ABSORPTION. THE GLUCOSE TEST CANNOT BE REGARDED AS A SPECIFIC REACTION FOR INVESTIGATING INTESTINAL ABSORPTION. THERE IS A CORRELATION BETWEEN THE CLINICAL SIGNS OF THE INTESTINAL DISEASE AND INDICES OF THE ABSORPTION TESTS.

UNCLASSIFIED

Acc. Nr: **AF0052330**

Ref. Code: **UAB238**

PRIMARY SOURCE: *Fiziologichnyi Zhurnal*, 1970, Vol 16, Nr 2,  
pp **221-227**

**NEW HYPOTHESIS ON CELL FUNCTION AND PROTEIN  
BIOSYNTHESIS RELATIONSHIP**

**V. V. Frofakis**

*Institute of Gerontology, Academy of Medical Sciences, USSR, Kiev*

**Summary**

The problem of plastic supply of functions proceeds from the notion of "ready" protein as a structural base for different manifestations of cell activity. At the same time during the constant process of the protein biosynthesis, essential metabolic shifts, complicated ion migrations take place considerably providing the integrations of different cell organoids. On the basis of analysis of experimental data, an assumption is advanced on the existence of one more important mechanism of interrelation of plastic processes and activity of cells—cell functions conjugate with the process of the protein biosynthesis. Many shifts in the cell activity in ageing can be explained by the change conjugation of cell functions and protein biosynthesis.

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REEL/FRA  
**19820916**

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1/2 044 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--COLD RESISTANCE OF THERMALLY HARDENED LOW CARBON STEEL -U-  
AUTHOR-(02)-GUL, YU.P., FRULKOV, A.S.  
COUNTRY OF INFO--USSR  
SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (3), 43-5  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS  
  
TOPIC TAGS--LOW CARBON STEEL, ALLOY DESIGNATION, ALLOY COMPOSITION, LOW  
TEMPERATURE METAL, LOW TEMPERATURE ALLOY, MATERIAL FRACTURE, CRYSTAL  
DISLOCATION, METAL HEAT TREATMENT, INTERNAL FRICTION/(U)A12 LOW CARBON  
STEEL  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/1716 STEP NO--UR/0129/70/000/003/0043/0045  
  
CIRC ACCESSION NO--AP0118694  
UNCLASSIFIED



2/2 044

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118694

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT WITH STEEL A12 (C 0.09, MN 0.91, SI 0.28, P 0.142, S 0.165, N 0.006, CU 0.044PERCENT, AND CR AND NI TRACES). SPECIMENS, DIAM. 20 AND LENGTH 200 MM, WERE NORMALIZED AT 920DEGREES, THEN COOLED BY HOLDING IN STATIONARY WATER FOR 4-27 SEC. THE AV. COOLING RATE WAS 350DEGREES-MIN. WIRE SPECIMENTS, DIAM. 1 MM, (FOR THE DETN. OF INTERFRICTION) WERE PLACED IN A SMALL STAINLESS STEEL TUBE AND ALL PLACED INTO THE LARGER SPECIMEN AS ABOVE, SO THAT THE COOLING RATE OF WIRE SPECIMEN WAS NEARLY EXACTLY THE SAME AS THAT OF LARGER SPECIMEN CENTERS. THEREAFTER, THE INTERNAL FRICTION, IMPACT STRENGTH, HARDNESS, AND THE TEMP. OF COLD BRITTLENESS WERE DETD. THE TEMP. OF COLD BRITTLENESS AND PLASTICITY WAS CHANGING NONMONOTONICALLY WITH CHANGES IN THE LEVEL OF HARDENING. IN ALL CASES THE PLASTICITY IN THE FRACTURE WAS HIGHER THAN THAT OF NORMALIZED STEEL. INCREASED COOLING PERIOD IN WATER (10-40 SEC.) CAUSED AN INCREASE OF THE HEIGHT OF THE PEAK OF INTERNAL FRICTION. DURING THERMAL HARDENING THE DEGREE OF SUPERSATN. OF K THE SOLID SOLN. WITH C, AS WELL AS THE DISLOCATION D. INCREASED. WHEN A CERTAIN C CONC. AT DISLOCATIONS IS REACHED, THEN FURTHER INCREASE OF DISLOCATION D. CAUSED AN INCREASE OF STEEL BRITTLENESS, SO THAT THE COLD BRITTLENESS TEMP. INCREASES AT HIGHER LEVELS OF HARDENING. THE TANGENT OF THE SLOPE OF THE INTERNAL FRICTION CURVE INCREASED INITIALLY WITH THE INCREASED PERIOD OF COOLING IN WATER. IT REACHED A MAX. AT A COOLING PERIOD OF 20 SEC. AND AT LONGER PERIODS IT DECREASED. FACILITY: DNEPROPETROVSK. MET. INST., DNEPROPETROVSK, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--ELECTRICAL CONDUCTIVITY IN MF-ALF SUB3-H SUB2 O SYSTEMS -U-  
AUTHOR--(03)-DMITREVSKIY, G.YE., FROLKOVA, S.A., NAZAROVA, I.N.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1102-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ELECTRIC CONDUCTIVITY, ALUMINUM FLUORIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1999/1110 STEP NO--UR/0073/70/015/004/1102/1104  
CIRC ACCESSION NO--AP0123102  
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AP0123102  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELEC. CONDS. OF ALF SUB3-H SUB2 O,  
MF-H SUB2 O (M EQUALS LI, NA, K, RB, CS), AND MF-ALF SUB3-H SUB2 O  
SYSTEMS WERE DETD. AT 25, 40, AND 60DEGREES AND CONCN. RANGE OF  
0.01-0.40 MOLE-L. (FOR LIF, 0.01-0.04 MOLE-L). AND THE RESULTS ARE  
PRESENTED GRAPHICALLY OR IN TABLES. THE SOLYS. OF 11MAF.4ALF SUB3,  
2KF.ALF SUB3, AND 2RBF.ALF SUB3 IN WATER ARE GIVEN. FACILITY:  
ODESS. GOS. UNIV., ODESSA, USSR.

UNCLASSIFIED

USSR

UDC (546.72'28 + 546.73'28):548.55

F  
FROLOV, A. A., KRENTSIS, R. P., and GEL'D, P. V., Ural Polytechnic Institute imeni S. M. Kirov, Sverdlovsk, Ministry of Higher and Secondary Specialized Education RSFSR  
"Growth of FeSi and CoSi Single Crystals by Czochralski Method"

Moscow, Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 4, Apr 70, pp 828-829

Abstract: The article describes the growth of FeSi and CoSi single crystals by the Czochralski method. The starting materials were K-0 brand cobalt, V-3 brand carbonyl iron and single-crystal silicon. Single crystals were grown from the melt on a ZhK 01.01 device (with graphite heater) in a vacuum of  $5 \cdot 10^{-5}$  mm Hg. Pulling rate 0.5-0.75 mm/min. The crucible and seed rotated in opposite directions at 30 and 45 rpm respectively. In some cases the upper rod remained immobile. The crucibles were of  $Al_2O_3$ . The composition of the grown single crystals was determined by X-ray from lattice parameters. The microhard-

USSR

FROLOV, A. A., et al., Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 4, Apr 70, pp 828-829

ness of unetched sections was measured on a PMT-3 device and was found to remain constant according to ingot length, which indicates the mechanical homogeneity of the single crystal.

2/2

USSR

UDC 621.317.43

VIKULOV, A. P., FROLOV, A. M.

"EML-5 Device for Measuring Ferrite Losses"

Elektron. tekhnika. Nauchno-tekhn. sb. ferrit. tekhn. (Electronic Engineering. Scientific and Technical Collection. Ferrite Engineering), 1970, vyp. 3 (25), pp 79-86 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A298)

Translation: An instrument designed for measuring the components of the complex resistance of ferrite magnetic conductors with direct reading within the limits from 0.001 to 10 microhenries and from 0.0001 to 1 ohm, respectively, is investigated. The measurements are taken in harmonic fields at magnetization reversal frequencies up to 3 megahertz and regulatable excitation currents from 5 milliamps to 1 amp. The high speed and accuracy of the measurements are obtained as a result of using a three-terminal single-loop separating excitation circuit in the form of a device with space-distributed elements in combination with the transformer bridge. The instrument is suitable for laboratory research and shop quality control of magnetic circuits.

1/1

1/2 014 UNCLASSIFIED  
TITLE--PHOTOLYSIS OF AROMATIC NITRO COMPOUNDS IN A WATER ALCOHOL SOLUTION  
OF SODIUM NITRITE (PHOTODENITRATION) -U-  
AUTHOR--(02)-EROLIV, A.N., YELISIV, A.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970 6(3) 637  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PHOTOLYSIS, ORGANIC NITRO COMPOUND, DENITRATION, SODIUM  
NITRITE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1992/1540 STEP NO--UP/0366/70/006/003/0537/0637  
CIRC ACCESSION NO--AP0112534  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112534

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOTOLYSIS OF 0.56M NANO SUB2 IN 1:1 MEGH-H SUB2 O GAVE NH SUB3 AND INCREASED THE PH FROM 7 TO 13. THE PHOTOLYSIS OF 4-CL-C SUB6 H SUB4 NO SUB2 IN THE ABOVE NANO SUB2 SOLN. GAVE C SUB6 H SUB6, PHCL, PHNO SUB2, PHOME, 4-MECC SUB6 H SUB4 OME, AND 4-HOC SUB6 H SUB4 NO SUB2. THE FORMATION OF C SUB6 H SUB6 IS THE 1ST OBSD. INSTANCE OF PHOTODENITRATION. THE FORMATION OF C SUB6 H SUB6 DOES NOT PROCEED THROUGH PHNO SUB2, SINCE THE PHOTOLYSIS OF PHNO SUB2 OR 3-O SUB2 NC SUB6 H SUB4 NO SUB2 DID NOT GIVE C SUB6 H SUB6. ALSO THE PHOTOLYSIS OF 4-BRC SUB6 H SUB4 NH SUB2 FAILED TO GIVE C SUB6 H SUB6 AND THEREFORE THE AMINE IS NOT AN INTERMEDIATE IN PHOTODENITRATION.

UNCLASSIFIED



Acc. Nr: AP0042252

Ref. Code:

UR 0103

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr 1, pp 76-87

CONCERNING CHOICE OF REGULATOR PARAMETERS  
IN RELAY SYSTEM OF STABILIZATION

A. N. PROLOV

There is considered a system of the stabilization of a cosmic flying apparatus, the system containing a relay element of general type with an inner feedback embracing it as well as a nonlinear element the characteristic of which contains an insensibility zone. It is shown that a delayed feedback may be applied to obtain simple low-frequency periodic conditions (auto-oscillations) in economic systems of the cosmic flying apparatus stabilization. There is suggested a method of determining the delayed feedback parameters, the method stimulating the choice of the adjustment by means of automatic scanning during the solution of the periodic equations on a digital computer. Examples are given.

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APC100367

Abstracting Service:  
CHEMICAL ABST.

Ref. Code:

UR0409

111383h Heterocyclic nitro compounds. I. Synthesis of nitro derivatives of 1,2,4-triazole, 1,3,4-thiadiazole, tetrazole, 1,3,4-oxadiazole and pyrazole by the noncatalytic substitution of a diazo group for a nitro group. Bagal, L. I.; Pevzner, M. S.; Frolov, A. N.; Shelud'yakova, N. I. (Leningrad, Tekhnol. Inst. im. Lensoyeta, Leningrad, USSR). *Khim. Geterotsikl. Soedin.* 1970, (2), 259-64 (Russ). Treating 1.68 g 3-amino-1,2,4-triazole in AcOH with 1.6 g NaNO<sub>2</sub> in 7 ml concd. H<sub>2</sub>SO<sub>4</sub> at -5 to 0° 5 min., followed by diln., <0°, and addn. of the soln. to 200 ml 10% NaNO<sub>2</sub> at 45-50°, and the mixt. heated 1 hr at 45° gave 57% 3-nitro-1,2,4-triazole, m. 210°. Alternatively, the amino-triazole in 10% H<sub>2</sub>SO<sub>4</sub> was added to 10% NaNO<sub>2</sub> at 45°. Similarly were prepd. the following 5-substituted derivs. (5-substituent shown): Me, m. 194°; Et, m. 121°; Pr, m. 92°; Ph, m. 222-3°; *p*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, m. 274-5°; *m*-isomer, m. 189°; CO<sub>2</sub>H, m. 102°; CO<sub>2</sub>Me, m. 134°; also the following 3-nitro-2-methyl-5(R-substituted)-1,2,4-triazoles: H, m. 83°; CO<sub>2</sub>H, m. 106°; and 3-nitro-4-methyl-1,2,4-triazole, m. 100°. Similar reaction with 3,5-diamino-1,2,4-triazole and NaNO<sub>2</sub> in aq. H<sub>2</sub>SO<sub>4</sub> gave 80% 3,5-dinitro-1,2,4-triazole, m. 135°, which was very hygroscopic. The following were prepd. similarly: 1-methyl-5-nitro-tetrazole, m. 55-6°; and the 2-Me analog, m. 86-7°. A suspension of 2.1 g. 2-amino-5-methyl-1,3,4-oxadiazole in 20% NaNO<sub>2</sub> at -5° treated over 3 hr with 100 ml 7% H<sub>2</sub>SO<sub>4</sub> at <0°,

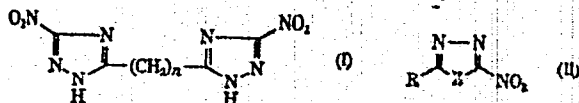
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gave 25% 2-nitro-5-methyl-1,3,4-oxadiazole, m. 75°. For this prepn. it was essential to shorten the contact with acids, as 1,3,4-oxadiazoles are unstable in acids. The following I were reported (*n* shown): 0, m. 256-7°; 1, m. 280-2°; and 2, m. 260-1°. Although 2-aminoimidazole and 2-aminopyridine failed to yield nitro derivs. by this method owing to instability of the diazonium



forms, the results confirmed the previously suggested mechanism for the introduction of the NO<sub>2</sub> group. (B., *et al.*, 1969). The following II were similarly prepd. (Z and R shown): S, H, m. 82°; S, Me, m. 62°; S, Ph, m. 141°; S, *o*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, m. 131°; S, *p*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, m. 179°; O, Me, m. 75°; and CH<sub>3</sub>, H, m. 175°. The yields were 25-76%.

G. M. Kosolapoff

19841790

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--SYNTHESIS AND STRUCTURE OF SOME DIAZONIUM SALTS OF THE  
1,2,4, TRIAZOLE SERIES -U-  
AUTHOR--(U5)-FROLOV, A.N., PEVZNER, M.S., SHOKHUR, I.N., GALKOVSKAYA, A.G.,  
BAGAL, L.I.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (5), 705-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ORGANIC-SYNTHESIS, MOLECULAR STRUCTURE, DIAZONIUM SALT,  
ORGANIC AZOLE COMPOUND, PERCHLORATE, NITRATE, CARBOXYL RADICAL,  
ELECTRONEGATIVITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/1028 STEP NO--UR/0409/70/000/005/0705/0709  
CIRC ACCESSION NO--AP0134740  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134740

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ME

3, DIAZO, 1, 2, 4, TRIAZOLE, 5, CARBOXYLATE,

3, DIAZONIUM, 5, PHENYL, 1, 2, 4, TRIAZOLE FLUOBORATE, PERCHLORATE, AND

NITRATE, 3, DIAZONIUM, 5, (P, NITROPHENYL), 1, 2, 4, TRIAZOLE, AND THE M, NITRO

ANALOG WERE PREPD. THE H ON THE N ATOM IN

3, DIAZONIUM, 5, CARBOXY, 1, 2, 4, TRIAZOLE WAS MORE ACIDIC THAN THE ONE IN THE

CARBOXYL GROUP. THE STRUCTURE OF A CRYST. DIAZONIUM SALT OF THE

TRIAZOLE SERIES DEPENDS ON THE ELECTRONEGATIVITY OF THE SUBSTITUENT IN

POSITION 5 OF THE RING.

FACILITY: Leningrad. Tekhnol. Inst. Im.

LENISOVETA, Leningrad; USSR.

UNCLASSIFIED

USSR.

UDC 666.76:621.792

VERENKOVA, E. M., TROFIMOV, M. G., FROLOV, A. S., and DIKAYA, L. I., All-Union Scientific Research Institute of Aircraft Materials

"Properties of Ceramic Coatings From Phosphate Ceramics"

Moscow, Ogneupory, No 1, Jan 71, pp 41-45

Abstract: Working on the assumption that the introduction of phosphate compounds into the composition of refractory oxides permits an increase in the adhesion strength of ceramic coatings and their thermal stability, the authors studied  $Al_2O_3$  and  $ZrO_2$  powder compositions with additions of aluminum phosphate binder with the following composition: 10-11 percent  $H_3PO_4$ , 15-16 percent  $Al(H_2PO_4)_3$ , 23-24 percent  $Al_2(HPO_4)_3$ , 50-51 percent  $H_2O$ . Density of binder 1.55-1.64 g/cm<sup>3</sup>. Weight ratio  $Al_2O_3:P_2O_5$  in the binder was 1:3.8. The coatings were applied by rod gas-flame

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VERENKOVA, E. M., et al., Ogneupory, No 1, Jan 71, pp 41-45

spraying. The resultant phosphate ceramic coatings possess good adhesion to metals and alloys, thermal stability, and impact strength. These properties are 1.5-3 times greater than those of existing aluminum oxide and zirconium dioxide coatings with or without additions of sodium silicate. On the basis of their low thermal conductivity and high adhesion strength and thermal stability, the coatings are recommended for the protection of metals and alloys against the effects of high-temperature gas flows.

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UDC 621.371:538.569.4

ABLYAZOV, V. S., BASHARINOV, A. Ye., GORELIK, A. G., GORDON, Z. I.,  
KALASHNIKOV, V. V., KUTUZA, B. G., MITNIK, L. M., PENYAZ', L. A.,  
FROLOV, A. V., and FROLOV, Yu. A.

"Absorption and Radiation of the Atmosphere in the 0.5-10 cm Range"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.  
(Tenth All-Union Conference on the Propagation of Radio Waves;  
Report Theses--collection of works) "Nauka," 1972, pp 3-7 (from  
RZh--Radiotekhnika, No 10, 1972, Abstract No 10A309)

Translation: The method and the results of measuring the absorption and radiation of the atmosphere for waves of 0.5-10 cm and, in particular, in the absorption bands of oxygen and water vapor, are given. The measurements were made for the purpose of investigating the propagation of uhf waves under various meteorological conditions, which were recorded simultaneously with the radio measurements. Curves are given of the attenuation and radio brightness temperature for rain clouds. Two illustrations, bibliography of five. N. S.

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UDC: 669.15'26'24'28'3-194:669'14.018.821

PETROVA, V. S., FROLOV, A. V., BATRAKOV, V. P., FILIMONOVA, L. A., BELOUS, V. Ya., NIKISHOV, A. S., BONDAREV, V. V., PODOL'SKIY, M. L.

"Stainless Steel"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334273, Division C, filed 2 Sep 68, published 30 Mar 72, p 104

Translation: This Author's Certificate introduces: 1. A stainless steel which contains carbon, chromium, nickel, molybdenum, copper and iron. As a distinguishing feature of the patent, mechanical properties are improved by taking the components in the following proportions in percent: carbon--0.03-0.1; chromium--10.05-11.9; nickel--3.3-4.0; molybdenum--2.3-3.0; copper--1.0-2.0; manganese--less than 0.6; silicon--less than 0.8; the remainder iron; and 2. a modification of this steel distinguished by the fact that the chromium:nickel ratio is 2.8-3.8.

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UDC 669-172

PANTELEYEVA, G. V., LYUTOVICH, A. S., CHUPRIKOV, G. Ye., and FROLOV, A. V.

"Structure and Electrophysical Properties of Boron in Crystals Produced by Crucibleless Zone Melting in a Vacuum and in an Atmosphere of Hydrogen"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 95-99

Translation: Results are presented from a study of the little-studied material, boron, which is being used increasingly for the manufacture of heat-resistant, refractory alloys, as well as for semiconductor devices for operation under high temperature conditions. Metallographic investigations by the method of chemical thermal etching were performed on high-purity specimens grown by crucibleless zone melting in various atmospheres. The superiority of the structure of boron grown in a vacuum in comparison to that produced in hydrogen is demonstrated. Certain electrophysical properties of boron crystals are studied. 2 Tables; 4 Figures; 4 Bibliographic References.

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1/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--THE SYNDROMOLOGICAL STRUCTURE OF DELIRIUM TREMENS -U-

AUTHOR--FROLOV, B.S. F

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,  
VOL 70, NR 5, PP 736-740  
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALCOHOL, PSYCHOSIS, EPILEPSY, HALLUCINATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1994/1125

STEP NO--UR/0246/70/070/005/0736/0740

CIRC ACCESSION NO--AP0115144

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115144

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER CONCERNS A STUDY OF THE SYNDROMOLOGICAL STRUCTURE OF DELIRIUM TREMENS IN 65 PATIENTS. AS A RULE, PSYCHOSES WERE MANIFESTED BY WITHDRAWAL (DYSPHORIC) SYMPTOMS. SUBSEQUENTLY, IT WAS SUBSTITUTED BY SYNDROMES OF CHANGES CONSCIOUSNESS WHERE EXCEPT THE DELIRIOUS CONDITION, SUCH STATES AS HALLUCINOSIS, EPILEPTIFORM ATTACKS AND TWILIGHT STATES ONIRISM AND COMA MAY BE SEEN. PSYCHOSIS MAY TERMINATE IN THE FOLLOWING WAY: WITH ASTHENICAL SYNDROMES, THE KORSAKOFF SYNDROME, RESIDUAL DELIRIUM AND RESIDUAL HALLUCINOSIS. THE AUTHOR UNDERLINES A CERTAIN PATTERN IN THE CHANGE OF THE SYNDROMES AND A POSSIBLE DEPENDENCY BETWEEN THE PROGNOSIS OF PSYCHOSIS. THE CORRELATION OF THESE PSYCHOPATHOLOGICAL SYNDROMES WITH ALL EXOGENIC TYPES OF REACTIONS, AS WELL AS THEIR TENDENCY TO BE ARRANGED IN A CERTAIN MANNER, GIVES GROUNDS TO ASSUME THAT THE EXOGENIC TYPE OF REACTIONS ARE A PHASE IN THE DEVELOPMENT OF ONE EXOGENIC ORGANIC PSYCHOSIS. FACILITY: KAFEDRA PSIKHIATRII VOYENNO-MEDITSINSKOY AKADEMII IM. S. M. KIROVA, LENINGRAD.

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